

## **REMARKS**

In response to the Office Action, Claim 1 is amended. Claims 1-7 remain in the Application. Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

### **I. Examiner Interview Summary**

An Examiner Interview was conducted on October 9, 2007 to discuss proposed amendments to Claim 1. The Examiner indicated that the specific features of an entangled nanotube fiber having at least two ends connecting to the substrate, and the creation of a plurality of curled nanotube fibers from the entangled nanotube fiber, may overcome the rejection over the cited references. However, no agreement was reached at the time of the interview.

### **II. Claims Rejected Under 35 U.S.C. § 103(a)**

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2001/0028209 to Uemura et al. (“Uemera”) in view of U.S. Patent Publication No. 2004/0095050 to Liu et al (“Liu”).

To establish a *prima facie* case of obviousness, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art.

Claim 1 is amended to include the elements of “each of the entangled nanotube fibers having at least two ends connecting to the substrate” and “creating a plurality of curled nanotube fibers from at least one of the entangled nanotube fibers by the laser beam, each of the plurality of curled nanotube fibers having a free end serving as an emission site.” Support for the amendment can be found, for example, at page 7, lines 3-7 of the specification.

Applicants submit that the cited references do not teach or suggest these elements.

The Examiner relies on Uemera to disclose curled nanotubes, and further relies on Liu to disclose the use of a laser beam to remove unwanted byproducts from nanotubes. However, none of the cited references discloses the use of a laser beam to create a plurality of curled nanotube fibers from an entangled nanotube fiber, each of the plurality of curled nanotube fibers having a free end serving as an emission site. Liu does not use the laser to create multiple pieces of

nanotube fibers that **stay** on the substrate. Rather, Liu uses the laser to **remove** unwanted substance on a nanotube from the substrate.

In the Examiner Interview, the Examiner indicated that Liu's disclosure about maintaining a uniform distance between adjacent tips of the fibers can be construed as suggesting that entangled fibers should be disentangled (see paragraphs 26 of Liu). However, there is no direct relationship between the uniformity of distance between adjacent tips and "creating a plurality of curled nanotube fibers from at least one of the entangled nanotube fibers." Whether the distance between adjacent tips of the curled nanotube fibers is uniform is irrelevant to the claimed invention. Combining the teaching of Liu with Uemera would have produced uniform distances between the tips of existing nanotube fibers, but would not have created more curled nanotube fibers.

Further, there is no indication in Liu that the free or loose ends of nanotube fibers can be increased or decreased. Liu disclose trimming and angling existing free or loose ends (tips) of fibers. Removing unwanted byproducts from the ends does not increase more loose ends. Thus, the Examiner's assertion that Liu discloses the feature of "smoothing the fibers by irradiation with a laser to crease more loose ends of the fibers" (page 3, lines 10-11 of Office Action) is unfounded.

For at least the foregoing reasons, Uemera in view of Liu does not teach or suggest each of the elements of Claims 1 and its dependent claims, namely, Claims 2-7. Accordingly, Applicants respectfully request that the § 103 rejection of Claims 1-7 be withdrawn.

**CONCLUSION**

In view of the foregoing, it is believed that all claims are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666.

Respectfully submitted,

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Marilyn Bass      October 18, 2007